

## ABSTRACT

The present invention is drawn to a method of suppressing the phenomenon of accelerated repopulation, i.e. the proliferation of cells upon exposure to a clinically relevant dose of radiation energy. More specifically, the invention provides a method of radiosensitizing cancer cells by administering an expressible nucleic acid molecule encoding a mutant form of epidermal growth factor receptor. In a preferred embodiment of the invention, the mutant form of epidermal growth factor receptor is EGFR-CD533, a C-terminal truncated epidermal growth factor receptor that lacks mitogenic and transformation activity. The method of this invention thus constitutes a gene therapy approach to the radiosensitization of cancer cells.